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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/554,426	07/24/2000	David George Melville Cruickshank	CRUICKSHANK	1379

7590 03/29/2004

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EXAMINER

QURESHI, AFSAR M

ART UNIT	PAPER NUMBER
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2667

DATE MAILED: 03/29/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/554,426

Applicant(s)

CRUICKSHANK ET AL.

Examiner

Afsar M Qureshi

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Corrections to drawings are approved by the Examiner and made of record.
2. The Examiner noted that a Preliminary amendment was filed on 7/24/200, a copy of which is found and made of record. In view of the Preliminary amendment (dated 7/24/200), the Examiner has withdrawn the rejection of claims 1-12 of the Office action mailed on September 23, 2003.
3. A letter "Notice of Non-Compliant Preliminary Amendment (37 CFR 1.121)", dated January 09, 2004, be disregarded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen et al. (WO 96/24206) in view of Blanchard et al. (US 5,629,929).

Claims 1, 2, 5 -12 Hottinen et al. ('Hottinen' hereinafter) disclose a communication terminal and a CDMA method implemented with plurality of *filter correlating means* 61a - 61c (see figures 6 and 7), each comprising groups of correlators being recognized on the basis of spreading code sequence (see page 18, line 16 through page 19 to line 33)

Hottinen does not specifically disclose *zero padded FFT means for operating on the output of the correlating means*, however, Blanchard, in the same field of endeavor, discloses a despreader comprising **zero padded** FFT means for operating on the output of the correlating means and to prevent partial correlation errors (see figs. 2 and 3, also col. 3, lines 33-50), Blanchard further discloses that the block size can be extended depending on the number of chips of received signals and number of chips of local reference to be correlated to the FFT size (see col. 3, lines 33-50, also see col. 4, lines 44-47 - Blanchard), as in *claims 2, 6-8 and 10*.

As for *claim 5*, Hottinen discloses use of hard limiter (see page 17, lines 11-13). Use of hard limiter is known in the art and is used to keep a constant amplitude envelope, i.e., to limit the magnitude of the integrated cross-correlation product

As for *claim 9*, Hottinen discloses, in figure, that the outputs of FFT means (61a-61c) is supplied to unit 62, MUD, a processor and functionally same as signal selector for signal acquisition. Applicant is to note that self-admitted 'prior art' figure 3, also shows these limitations.

As for claims 11 and 12, as discussed above, Hottinen discloses that signal is first processed and combined with hard limiter and then provided to the FFT 61a -61c, as is evident from figure 6 and page 17, lines 10-15 (*claim 11*). As for *claim 12*,

Blanchard discloses a computing method in which maximum signal of the spreading sequence is selected to acquire the signal (see col. 4, lines 15-52 and discussion in the rejection of claim 9 above)

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to incorporate the teachings of Blanchard by utilizing zero padded FFT means in order to extend the block size and to prevent circular convolution or partial correlation errors when extending the block size.

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen and Blanchard as applied to claim 1 above, and further in view of Shiba et al. WO 96/24198 (published 8/8/1996, US 6,134,264).

Blanchard discloses that the chip length and the number of correlators define the length of spreading size (page 50, lines 5-9 < WO 96/24198> or col. 5, lines 66 through col. 6, lines 1-27 < US 6,134,264>).

The chip length of correlators is old and known to a skilled artisan [*the longer the chip length or the spreading code bit length, the higher the detected SNR and longer the spread process gain*]. Shiba et al. disclose a communication device having a chip length of 25 (see col. 21, lines 36-41 of US 6,134,264, direct translation of WO 96/24198).

Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to be able to keep chip length of correlators to desired length in order to acquire longer spread process gain as stated above.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rice (US 5,463,657) 'DETECTION OF A MULTI-SEQUENCE SPREAD SPECTRUM SIGNAL'.

Schilling et al. (US 5,553,062) 'SPREAD SPECTRUM CDMA INTERFERENCE CANCELER SYSTEM AND METHOD'.


Shin et al. (US 6,014,416) 'METHOD AND CIRCUIT FOR DETECTING DATA SEGMENT SYNCHRONIZING SIGNAL IN HIGH-DEFINITION TELEVISION'.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Afsar M Qureshi whose telephone number is (703) 308 8542.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305 4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 1, 2004



AFSAR QURESHI
PATENT EXAMINER